

Notic of Allowability

Application No.

10/707,667

Examiner

Linh V Nguyen

Applicant(s)

KOIKE, HIDCHARU

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/31/03.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ The drawings filed on 31 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

This office action is in response to application 10/707,677 filed on 12/31/03.

Claims 1 – 7 are pending on this application.

Allowable Subject Matter

1. Claims 1 – 7 are allowed.
2. The following is an examiner's statement of reasons for allowance:

With respect to claim 1, the prior art does not teach a dual slope analog to digital converter, comprising: a first operational amplifier, an integrator; a comparator, whose positive input is coupled to the output of the integrator, a resistor coupling the output of the first operational amplifier and the first input of the integrator, and a first capacitor coupling the first input of the integrator and the negative input of the comparator, wherein a plurality of couplings are controlled by a plurality of switches, comprising: a first coupling, controlled by a first set of switches, for optionally forming a negative feedback loop for the first operational amplifier, a second coupling, controlled by a second switch, for optionally forming connection between the negative input of the comparator and the positive terminal of the first operational amplifier, and a third coupling, controlled by a third switch, optionally forming connection of feedback loop from the output of the comparator to the positive terminal of the first operational amplifier.

With respect to claim 5, the prior art does not teach a dual slope analog to digital converter, comprising: a first operational amplifier, a comparator, whose positive input is coupled to an analog ground; a first resistor, coupling a first pin an output of the first

operational amplifier, a first capacitor, coupling negative input of the comparator and the first pin and a second capacitor, coupling the first pin and a ground, wherein a plurality of couplings are controlled by a plurality of switches, comprising : a first coupling, controlled by a first set of switches, for optionally forming a operational amplifier, a second coupling, controlled by a second switch, for optionally forming connection between positive input negative feedback loop of the first terminal of the first operational amplifier and negative input terminal of the comparator, and a third coupling, controlled by a third switch, for optionally forming a negative feedback loop from the output of the comparator to the positive terminal of the first operational amplifier.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mo U.S. Patent No. 5,519,352.

Bahng et al. U.S. Patent No. 5,194,868.

Abbe et al. U.S. Patent No. 4,217,542.

Marriott U.S. Patent No. 4,082,998.

Lee et al. U.S. Patent No. 6,646,586.

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Rao et al. U.S. Patent No. 6,366,231.

Regier U.S. Patent No. 6,243,034.

Liao U.S. Patent No. 5,592,168.

Mosley et al. U.S. Patent No. 4,050,065.

Reay U.S. Patent No. 5,612,698.

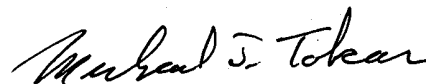
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Tokar can be reached at (571) 272-1812. The fax phone numbers for the organization where this application or proceeding is assigned are (703-872-9306) for regular communications and (703-872-9306) for After Final communications.

LVN

05/17/2004



Michael Tokar
Supervisory Patent Examiner
Technology Center 2800